

## Quad 10GBASE-T to XAUI Converter

CTC-ENET-QUAD-10G



### FEATURES

- + (4) 10G Ethernet Channels
- + Protocol conversion between 10GBASE-T and XAUI
- + Perfect for routing multiple 10 Gigabit Ethernet connections into systems and to and from circuit boards
- + Compliant with IEEE 802.3an Ethernet Standards and Specifications
- + Hermetic option available with a helium leak rate of 10-4 cc/sec

### 10GBASE-T COPPER INTERFACE

- + D38999 Shell Size 25 with standard rotations available
- + 8 High speed split-pair quadax contacts capable of 6.25Gbps
- + Allows for (4) ports of 10 gigabit ethernet

### XAUI INTERFACE

- + Samtec Q Series<sup>®</sup> High Speed Cable Assembly
- + Consult factory for specific type required

### POWER SPECIFICATIONS

- + 5V power connection in Samtec connector flexible ribbon cable
- + Low power consumption
  - Less than 5 watts

### RUGGEDIZATION

- + Natural convection cooled (no fan or cold plate required)
- + Operational temperature
  - 40°C to +85°C
- + Storage temperature
  - 50°C to +125°C
- + EMI/EMC compatible
- + Refer to page 5 for additional details

### OVERVIEW

Amphenol Aerospace adds 10GBASE-T to XAUI Converter to the Integrated Electronic Products line. This product line is rugged, flexible, and affordable with many options available.

This 10GBASE-T to XAUI converter couples SerDes technology and transformer coupling, which allows for protocol conversion with a new level of ruggedization. This product takes a high speed signal in an electrical backplane and convert it to a protocol that allows for signal transmission over 100 meters between devices.



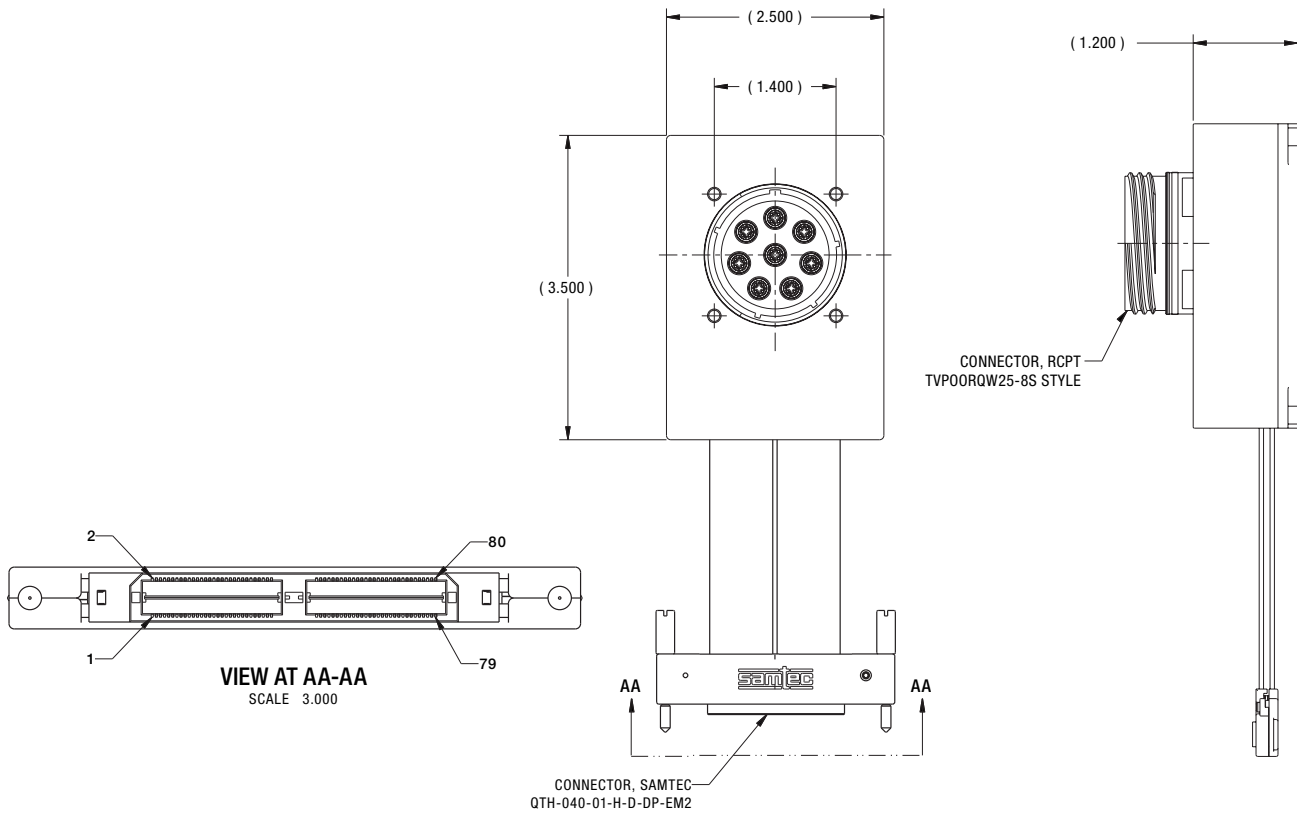
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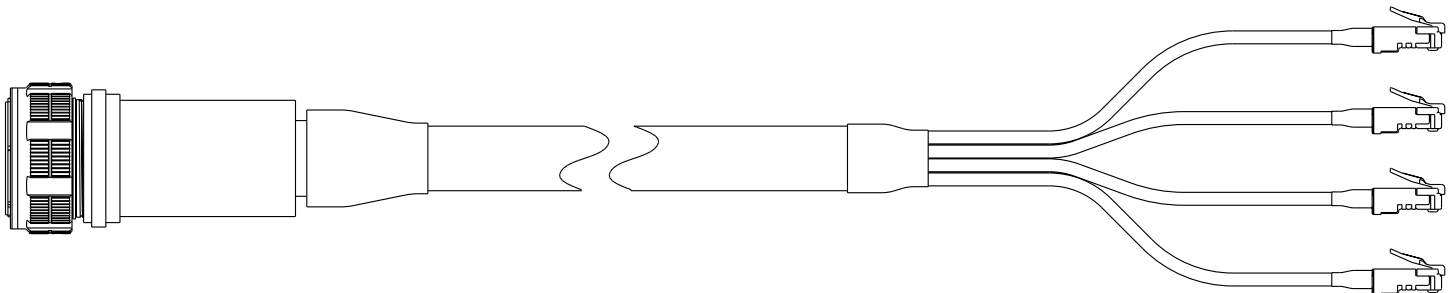
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## Drawing for both Hermetic & Non-Hermetic Configurations



## Drawing for Test Cable CA-628485-A2( )



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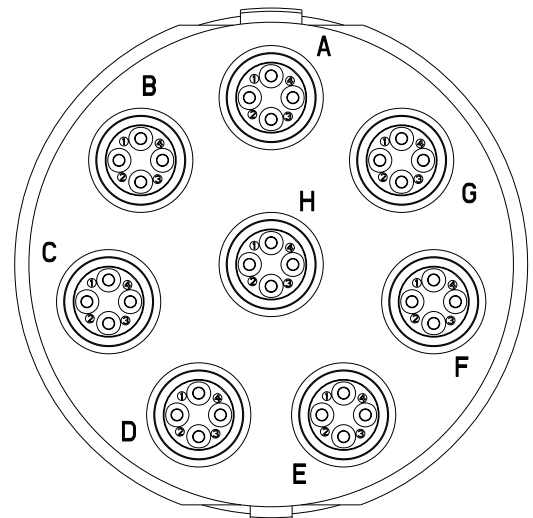
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## Pinout

Samtec HQDP-040 (40 pairs; 80 signals)							
Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	CH 1 XAUI 1 Tx+	2	CH 2 XAUI 1 Tx+	41	CH 3 XAUI 1 Tx+	42	CH 4 XAUI 1 Tx+
3	CH 1 XAUI 1 Tx-	4	CH 2 XAUI 1 Tx-	43	CH 3 XAUI 1 Tx-	44	CH 4 XAUI 1 Tx-
5	CH 1 XAUI 1 Rx+	6	CH 2 XAUI 1 Rx+	45	CH 3 XAUI 1 Rx+	46	CH 4 XAUI 1 Rx+
7	CH 1 XAUI 1 Rx-	8	CH 2 XAUI 1 Rx-	47	CH 3 XAUI 1 Rx-	48	CH 4 XAUI 1 Rx-
9	CH 1 XAUI 2 Tx+	10	CH 2 XAUI 2 Tx+	49	CH 3 XAUI 2 Tx+	50	CH 4 XAUI 2 Tx+
11	CH 1 XAUI 2 Tx-	12	CH 2 XAUI 2 Tx-	51	CH 3 XAUI 2 Tx-	52	CH 4 XAUI 2 Tx-
13	CH 1 XAUI 2 Rx+	14	CH 2 XAUI 2 Rx+	53	CH 3 XAUI 2 Rx+	54	CH 4 XAUI 2 Rx+
15	CH 1 XAUI 2 Rx-	16	CH 2 XAUI 2 Rx-	55	CH 3 XAUI 2 Rx-	56	CH 4 XAUI 2 Rx-
17	CH 1 XAUI 3 Tx+	18	CH 2 XAUI 3 Tx+	57	CH 3 XAUI 3 Tx+	58	CH 4 XAUI 3 Tx+
19	CH 1 XAUI 3 Tx-	20	CH 2 XAUI 3 Tx-	59	CH 3 XAUI 3 Tx-	60	CH 4 XAUI 3 Tx-
21	CH 1 XAUI 3 Rx+	22	CH 2 XAUI 3 Rx+	61	CH 3 XAUI 3 Rx+	62	CH 4 XAUI 3 Rx+
23	CH 1 XAUI 3 Rx-	24	CH 2 XAUI 3 Rx-	63	CH 3 XAUI 3 Rx-	64	CH 4 XAUI 3 Rx-
25	CH 1 XAUI 4 Tx+	26	CH 2 XAUI 4 Tx+	65	CH 3 XAUI 4 Tx+	66	CH 4 XAUI 4 Tx+
27	CH 1 XAUI 4 Tx-	28	CH 2 XAUI 4 Tx-	67	CH 3 XAUI 4 Tx-	68	CH 4 XAUI 4 Tx-
29	CH 1 XAUI 4 Rx+	30	CH 2 XAUI 4 Rx+	69	CH 3 XAUI 4 Rx+	70	CH 4 XAUI 4 Rx+
31	CH 1 XAUI 4 Rx-	32	CH 2 XAUI 4 Rx-	71	CH 3 XAUI 4 Rx-	72	CH 4 XAUI 4 Rx-
33	5V Power	34	5V Power	73	5V Power	74	5V Power
35	Ground	36	Ground	75	Ground	76	Ground
37	MDIO	38	MDC	77	Spare	78	Spare
39	Spare	40	Spare	79	Spare	80	Spare
Ribbon Connector - QTH-040-01-H-D-DP-EM2							
Board Connector - QSH-040-01-H-D-DP-K							
Board connector must be used with SO-0165-04-01-02 screw mounts with correct spacing							

MIL-DTL-38999 Shell Size 25-8 Split Quadax					
Quad	Pin	Description	Quad	Pin	Description
A	1	CH 1 A+	E	1	CH 3 A+
	4	CH 1 A-		4	CH 3 A-
	2	CH 1 B+		2	CH 3 B+
	3	CH 1 B-		3	CH 3 B-
B	1	CH 1 C+	F	1	CH 3 C+
	4	CH 1 C-		4	CH 3 C-
	2	CH 1 D+		2	CH 3 D+
	3	CH 1 D-		3	CH 3 D-
C	1	CH 2 A+	G	1	CH 4 A+
	4	CH 2 A-		4	CH 4 A-
	2	CH 2 B+		2	CH 4 B+
	3	CH 2 B-		3	CH 4 B-
D	1	CH 2 C+	H	1	CH 4 C+
	4	CH 2 C-		4	CH 4 C-
	2	CH 2 D+		2	CH 4 D+
	3	CH 2 D-		3	CH 4 D-



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## Ordering Guide

Ordering procedure is shown below using part number CTC-

1.	2.	3.	4.	5.	6.	7.	8.
Connector Type	Material	XAU Interface	Finish	Shell Style	Option (Hermetic or Non-Hermetic)	D38999 Connector Rotation	Main Keyway Rotation
CTC							

### Step 1. Connector Type

	Designates
CTC	Copper to Copper Media Conversion Family

### Step 2. Select a Material

	Designates
-5	Aluminum Shell
-6	Composite Shell
-8	Stainless Steel Shell

### Step 3. Select a SGMII Interface

	Designates
-5	Samtec Q Series® Connector

### Step 4. Select a Finish

	Designates
T	Aluminum Durmalon
Z	Aluminum Black Zinc Nickel
F	Aluminum Electroless Nickel
M	Composite Electroless Nickel
W	Aluminum OD Cad
J	Composite OD Cad
L	Stainless Steel Electrodeposited Nickel
Y	Stainless Steel Passivated

### Step 5. Select a Shell Style

	Designates
0	Wall Mount

### Step 6. Select an Option

	Designates
05	Non-Hermetic
06	Hermetic

### Step 7. Select a Rotation for D38999 Connector (IAW MIL-DTL-38999)

	Designates
N	N
A	A
B	B
C	C
D	D

### Step 8. Select a Rotation for Main Keyway (IAW MIL-DTL-38999)

	Designates
W	0°
X	90°
Y	180°
Z	270°

### Available Test Equipment

	Part Number	Description
Test Cable	CA-628485-A20	RJ45 Test Cable for D38999 Connector, 5'
	CA-628485-A21	RJ45 Test Cable for D38999 Connector, 10'
	CA-628485-A22	RJ45 Test Cable for D38999 Connector, 15'
	CA-628485-A23	RJ45 Test Cable for D38999 Connector, 20'
Test Board	CF-020005-013	SMA Test Board for Samtec Connector

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## Overview

Amphenol integrated electronic products are designed and manufactured to our Ruggedization guidelines listed below. These guidelines ensure years of reliable operation in harsh environment applications where extreme operating temperatures, shock, vibration and corrosive atmospheres are regularly experienced

## Temperature

- Operating Temperature - Thermal Cycles between -40°C and 85°C while device is operating
- Temperature is measured at chassis housing or card edge
- Storage Temperature - Thermal Cycles between -55°C and 125°C

## Humidity

- Operating Humidity – Humidity cycle between 0-100% non-condensing humidity while device is operating
- Storage Humidity – Humidity cycle between 0-100% condensing humidity

## Sealing

- Sealing can be optionally provided at the MIL-DTL-38999 interface with up to 10-5 cc/sec performance

## Fluids Susceptibility

- MIL-DTL-38999 receptacle interface per EIA-364-10E

## Vibration & Shock

- Sine Vibration – 10 g Peak, 5-2,000Hz
  - Based on a sine sweep duration of 10 minutes per axis in each of three mutually perpendicular axes. May be displacement limited from 5 to 44 Hz, depending on specific test.
- Random Vibration - 0.005@5Hz, 0.1@15Hz, 0.1@2,000Hz
  - 60 minutes per axis, in each of three mutually perpendicular axes.
- 40 G Peak Shock Cycle
  - Three hits in each axis, both directions, ½ sine and terminal-peak saw tooth, Total 36 hits.

## Altitude

- -1,500 to 60,000 ft Altitude Testing w/ Rapid Depressurization

## Electromagnetic Compatibility

- Designed to comply with MIL-STD-461E

## Printed Circuit Board Assemblies

- Conformal Coat
  - Amphenol performs Conformal Coating to both sides of printed circuit board assemblies using HUMISEAL IB31 in accordance with IPC-610, Class 3.
- Printed Circuit Board Rigidity
  - Amphenol printed circuit boards are fabricated in accordance with IPC-6012, Class 3.
- Printed Circuit Board Fabrication
  - Amphenol printed circuit boards acceptance criteria is in accordance with IPC-610, Class 3.

## Reliability Predictions (MTBF)

Amphenol can perform Mean Time Between Failure (MTBF) reliability analysis in full compliance with MIL-HDBK-217F-1 Parts Count Prediction and MIL-HDBK-217F-1 Parts Stress Analysis Prediction. We can also perform reliability analyses in full compliance of ANSI/VITA 51.1 if it is required or preferred over the later method.

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